

CR-AVE Flight Summary
17 January 2006
All times given in CST

General Information

Flight date- 17 January 2006

Flight description – Flight 1 CR-AVE Remote Payload Data Flight (4th flight)

Flight duration - 4.5 hours

Crew – Rick Hull, John Bain

Instruments flown (20): 2DS, ACAM, ALIAS, CAFS, CAPS, CO₂, CoSSIR, CPI, CPL, CRS, Frostpoint, ICOS, JLH, MMS, MTP, Ozone, PALMS, PANTHER, PT, WAS

Flight Log

Engine Start	11:20 am	Takeoff	11:47 am	Approach	3:47 pm
Data Rec On	10:59 am	Begin Descent	3:39 pm	Landing	4:14 pm

Gear extensions/retractions

Gear Up	11:47 am	4:00 pm				
Gear Down	3:46 pm	4:07 pm				

Weather Observations

Climb-Out:

- The sky was clear near the ground on climb-out. Numerous clouds were in the sky above us.
- We crossed through the cloud level between the clouds at 11:57 am (30 kft). Five photos were taken of these high clouds.

Cruise:

- Four photos were taken at 12:21 pm (55 kft), about 125 miles from waypoint 3, to show a high cloud layer at or below our level. Two more photos of this cloud layer were taken at 12:29 pm, 85 miles from waypoint 3.
- Two pictures were taken on the right side at 12:34 pm (55 kft) to show a very thin cloud layer in the distance, at or near our altitude.
- Two photos were taken of our contrail at 12:42 pm, just after turning north at waypoint 3.
- A photo was taken of our contrail at 12:52 pm, about 65 miles north of waypoint 3, to show the altitude delta above the cloud layers of our contrail.
- Two photos were taken at 12:55 pm to show a high layer above the scattered cumulus clouds near the ground.
- Four pictures were taken at 1:17 pm (56 kft), 50 miles from waypoint 4, to show cumulus clouds below. The high layer shown in the photos taken at 12:55 pm is gone.
- Four photos were taken of islands on each side of the aircraft at 1:22 pm.
- Two photos were taken at 2:27 pm (55 kft, 250 miles from waypoint 2) of a high cloud layer on the right side of the aircraft and above the cumulus clouds near the ground. Two more photos of the same cloud layer were taken off the left side of the aircraft at 2:48 pm.
- Two photos were taken of our contrail at 3:43 pm as we were in the spiral descent. Two more photos of the contrail were taken later in the spiral.

Descent:

- We penetrated a thin cloud layer between about 6 kft to about 4 kft on final approach to the San Jose airport.

Flight Profile

We climbed to 55 kft and cruised to waypoint 3, where we turned north along the satellite track at 12:42 pm. We initiated a slow climb at 12:48 pm. We reached waypoint 4 at 1:25 pm (56.1 kft). We reached 57 kft at 1:39 pm, about 205 miles from waypoint 5. At 1:54 pm, about 98 miles from waypoint 5, we initiated the three-sided box turn back towards waypoint 6. This early turn was required due to fuel projections. We started the descent to 41 kft at 2:13 pm. We began our climb to max altitude at 2:15 pm. At 3:05 pm, we arrived at waypoint 8 and turned back to waypoint 9. The flight from waypoint 8 to waypoint 9 was performed at 61 kft. We arrived at waypoint 9 at 3:19 pm, turned back to waypoint 8, and started the descent to 55 kft. We arrived over the airport at 3:39 pm (55 kft), and began a spiral descent. The final descent began at 3:47 pm (18 kft).

Instrument Notes

- The CAPS display loaded, but showed no numbers. It was closed and reopened with no improvement. A photo was taken at 12:29 pm for reference.
- The CAFS upper fail light came on at 12:12 pm. It was reset successfully.
- WAS 1 was turned on at 12:17 pm.
- The MMS yaw maneuver was initiated at 12:17 pm and completed at 12:18 pm.
- The MMS pitch maneuver was initiated at 12:18 pm, and completed at 12:19 pm (55 kft).
- WAS 2 and S-HIS were turned on at 3:39 pm at the beginning of the spiral descent over the field.
- The S-HIS fail light came on as expected during the final descent (3:43 pm).
- The WAS 2 fail light came on during the final approach. No action was taken.